

# Recommendations of the Advisory Committee on Immunization Practices (ACIP) to Eliminate Hepatitis B Transmission in the U.S.

Since 1990, the number of acute hepatitis B cases in the U.S. has declined 80%; the rate reported in 2005 was 1.8 per 100,000 population. This steady decline has coincided with the implementation of a national strategy to achieve the elimination of hepatitis B.

The federal Advisory Committee on Immunization Practices (ACIP) has published two new reports to update the immunization strategy to eliminate hepatitis B virus (HBV) transmission. The first was *A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices [ACIP], Part 1: Immunization of Infants, Children, and Adolescents* released in December 2005. The second report was Part II, *Immunization of Adults* released in December of 2006.

## Infants, Children and Adolescents

In Part I, ACIP updates the strategy to improve prevention of perinatal and early childhood HBV transmission. The following summarizes some of the specific recommendations for hepatitis B prevention:

- All pregnant women should be tested routinely for HBsAg and a copy of the original laboratory report sent to the delivery hospital for inclusion in the patient's medical record.
- Vaccination of infants at birth
  - Full-term infants who are medically stable and weigh  $\geq 2000$  g born to HBsAg-negative mothers should receive single-antigen hepatitis B vaccine before hospital discharge. This will provide a safety net and help protect babies at risk for perinatally acquired hepatitis B when the mother's lab results are not interpreted correctly, or there are failures in reporting results, or errors in maternal HBsAg testing. Birthing hospitals are encouraged to establish standing orders to ensure that the birth dose is given.
  - Infants (including preterm infants) born to mothers who are HBsAg positive should receive hepatitis B vaccine and hepatitis B immune globulin (HBIG)  $\leq 12$  hours of birth. For preterm infants weighing less than 2000 grams at birth, this initial vaccine dose should not be counted as part of the vaccine series because of the potentially reduced immunogenicity of hepatitis B vaccine in these infants; 3 additional

doses of vaccine (for a total of 4 doses) should be administered beginning when the infant reaches age 1 month.

- Infants born to mothers whose HBsAg status is unknown should receive hepatitis B vaccine  $\leq 12$  hours of birth. The mother should have blood drawn as soon as possible to determine her HBsAg status; if she is HBsAg positive, the infant should receive HBIG as soon as possible (no later than age 1 week).
- Preterm infants weighing  $< 2,000$  g born to HBsAg negative mothers should receive the first dose of vaccine 1 month after birth or at hospital discharge;
- Preterm infants weighing  $< 2,000$  g born to mothers whose HBsAg status is unknown should receive both single-antigen hepatitis B vaccine and HBIG if the mother's HBsAg status cannot be determined  $\leq 12$  hours of birth because of the potentially decreased immunogenicity of vaccine in preterm infants. The birth dose of vaccine should not be counted as part of the 3 doses required to complete the vaccine series; 3 additional doses of vaccine (for a total of 4 doses) should be administered according to a recommended schedule on the basis of the mother's HBsAg test result.
- Completion of the hepatitis B vaccination series:
  - All infants should complete the hepatitis B vaccine series with either single-antigen vaccine or combination vaccine, according to a recommended vaccination schedule.
  - Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg after completion of the hepatitis B vaccine series at age 9–18 months.
- All unvaccinated children and adolescents under 19 years of age should receive the hepatitis B vaccine series. Systematic reviews of the immunization records for all children 11–12 years of age and for children and adolescents aged  $< 19$  years who were born in countries with intermediate and high levels of HBV endemicity is recommended.

## Adults

During 1990–2005, acute hepatitis B rates among adults declined 76%. Among adults, a high proportion of

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cases occur among persons in identified risk groups (i.e., intravenous drug users (IDUs), men who have sex with men (MSM), and persons with multiple sex partners), indicating a need to strengthen efforts to reach these populations with vaccine. Part II of the ACIP statement provides updated recommendations to increase hepatitis B vaccination of adults at risk for HBV infection.

The following summarizes the recommendations for vaccination of adults at increased risk for hepatitis B infection:

- In settings where a high proportion of adults who are at greatest risk for hepatitis B infection receive services (e.g., sexually transmitted disease [STD]/human immunodeficiency virus [HIV] testing and treatment facilities, drug-abuse treatment and prevention settings, health-care settings targeting services to IDUs, health-care settings targeting services to MSM, and correctional facilities), providers should implement universal hepatitis B vaccination.
- In other primary care and specialty medical settings in which adults at risk for HBV infection receive care, health-care providers should inform all patients about the health benefits of vaccination, including risks for HBV infection and persons for whom vaccination is recommended, and vaccinate adults who report risks for HBV infection and any adults requesting protection from HBV infection.
- In occupational health programs health-care providers should identify staff whose work-related activities involve exposure to blood or other potentially infectious body fluids, provide education to encourage vaccination, implement active follow-up, with reminders to track vaccine-series completion among persons receiving vaccination, and provide appropriate postvaccination testing 1–2 months after vaccine-series completion.

The ACIP recommends that health-care providers promote adult hepatitis B vaccination in all settings by:

- Implementing standing orders to identify adults recommended for hepatitis B vaccination and administer vaccination as part of routine clinical services,
- Not requiring acknowledgment of an HBV infection risk factor for adults to receive vaccine, and
- Use of available reimbursement mechanisms to remove financial barriers to hepatitis B vaccination.

### Summary

Hepatitis B vaccination is the most effective measure to prevent hepatitis B virus (HBV) infection and its consequences, including cirrhosis of the liver, liver cancer, liver failure, and death. The ACIP's immunization strategy to eliminate transmission of HBV infection in the U.S. calls for universal vaccination of infants beginning at birth; prevention of perinatal HBV infection through routine screening of all pregnant women for hepatitis B surface antigen (HBsAg) and immunoprophylaxis of infants born to HBsAg positive women and infants born to women with unknown HBsAg status; routine vaccination of previously unvaccinated children and adolescents, and vaccination of previously unvaccinated adults at increased risk for infection.

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